INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1936 No. 9

DISCOVERIES AND CURRENT EVENTS *

Angola: Locust Movements (*Nomadacris septemfasciata* and *Locusta migratoria migratorioides*) †

Below is given a summary of the locust situation in the Colony during the first quarter of 1936.

Luanda District. — In January, some swarms were observed and at the end of the month, laying started in Icolo and Bengo. In February, collection of egg-pods was started in both these places and 1.354 kg. were collected. During this month laying was reported though locusts movements were slight. In March, 740 hopper bands were destroyed and 110 kg. of egg-pods were collected. In April, the control was continued and 626 hopper bands were destroyed and more than 733 kg. of egg-pods were collected. In Libongos a certain amount of damage to cotton crops was reported.

Congo District. — At the end of January, control of the hoppers was carried out in Bembe with a gang of 200 natives. At the beginning of February, a number of hopper bands appeared. In March, this district was invaded by a large quantity of locusts; in Sanza Combo 1.309 kg. of egg-pods were collected. In April, the locust control was continued.

Zaire District. — On 21 January a swarm covering 8 km. was observed at Emilio de Carvalho. In February, laying was reported and the control was started in certain regions invaded by hoppers. In March, the invasion by hoppers was general and the control was continued.

Huila District. — In January, various swarms were reported in several zones in this district. In February and March a similar situation was reported, the locusts causing damage of no great importance. In April, hopper bands were seen in various places also adults.

Bié District. — In January and February, some swarms and egg-laying were reported.

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from Mr. Jorge de Barros Rodrigues Queiroz, Director of the Laboratory of Plant Pathology and Agricultural Entomology, Luanda, attached, as expert, to the Service of Locust Control, transmitted to the Institute by the Government General of the Colony.

Quanza Norte District. — In February, a swarm was reported at Ambaca where laying took place. In March, large hopper bands appeared in Lucala. During this month 174 kg. of egg-pods were collected and destroyed.

Quanza Sul District. — In February, large swarms appeared in certain regions in this district. In March, hopper bands were reported in Cabuta and Baixa do Quanza.

Malange District. — In the middle of February, hoppers began to appear in this district. In April, the appearance of large hopper bands was reported in various localities.

Benguela District. — In March, a great number of hopper bands were observed and controlled at Egito.

Mozambique: Locust Movements (*Nomadacris septemfasciata* and *Locusta migratoria migratorioides*) *

During the month of April, 1936, the presence of some hoppers has been noted in the central zone of the Colony, which indicates a delay in hatching compared with past years.

The movement of the swarms took place chiefly in regions near the Zambesi river, that is, the districts of Quelimane and Tete.

During this month, however, some hopper bands were destroyed.

In the south of the Colony, the same phenomenon is reported, that is to say there were a certain number of hoppers during the month of April.

In the circumscription of Maputo, a late appearance is reported of hoppers, which are infesting the greater part of the Libombos plains.

In the greater part of the circumscriptions, the number of hopper bands was less than last year, with the exception of Sabié and part of Maputo. Control of most of these bands has been effected.

The adults have begun to swarm.

Southern Rhodesia: Locust Invasion, 1932-1936 †

Monthly Report No. 43. June, 1936.

Few reports of locusts have been received during the month, and these have referred only to the Red Locust (*Nomadacris septemfasciata*, Serv.).

The last hoppers were destroyed or developed wings early in the month.

* Communication from Mr. JÚLIO GARDÉ ALFARO CARDOSO, Chief of the Entomological Section Lourenço Marques, transmitted to the Institute by the 'Repartição Técnica de Agricultura' of the Colony.

† Communication from the official correspondent of the Institute, Mr. RUPERT W. JACK, F. E. S., Chief Entomologist, Agricultural Laboratory, Department of Agriculture, Salisbury, Southern Rhodesia.

Winged swarms have been reported from the districts of Charter, Hartly, Chibi, Victoria, Mazoe, Lomagundi, Salisbury and Mrewa.

Most of these have been described as of 'small' or 'medium' size, but one swarm seen in the north of the Lomagundi district on the 20th was described as 'large'.

The position appears to have been very similar to that during June last year, except that the swarms have been smaller.

Rumania: Diseases of Cultivated Plants Observed in 1934-1935 *

I. Cereals.

WHEAT.

Thanks to exceptional meteorological conditions of the spring of 1935, invasions by rusts have not been so serious as in preceding years. The most widespread has been *Puccinia triticina*.

Tilletia tritici and *T. foetens*.
Fusarium nivale.

BARLEY.

Helminthosporium teres.

OATS.

Ustilago avenae.

RYE.

Puccinia dispersa.
Claviceps purpurea.

MAIZE.

Ustilago zeae.
Puccinia maydis, very widespread.
Fusarium moniliforme.

II. Industrial Plants.

TOBACCO.

Mosaic (Ring spot).
Ascochyta nicotianae.

SOYA.

Mosaic.

LUFFA.

Mosaic.

SUNFLOWER.

Sclerotinia Libertiana.

COTTON.

Bacterium Malvacearum, very widespread.
Pythium de baryanum, on seedlings in glass houses.

CHICK PEAS.

Ascochyta rabiei.

* Communication from the official correspondent of the Institute, Prof. TR. SĂVULESCU, Chief of the Phytopathological Section, Institute of Agronomical Research of Rumania, Bukarest.

III. Grape vine.

Chlorosis.
Plasmopara viticola, in the districts of the former Kingdom.

Court-noué.
Charrinia diplodiella.

IV. Vegetables.

HARICOT BEANS.

Mosaic.
Uromyces appendiculatus.
Bacterium phaseoli.

PEPPER.

Actinomyces totschidlowskii.

ONIONS.

Peronospora schleideni.

SPINACH.

Peronospora spinaciae.

V. Ornamental Plants.

ROSE.

Sphaerotheca pannosa.
Phragmidium subcorticium.
Cercospora rosae.
Diplocarpon rosae.

CARNATION.

Heterosporium echinulatum.

IRIS GERMANICA.

Heterosporium pruneti.

RIBES AUREUM.

Cronartium ribicola.

ELEAGNUS ANGUSTIFOLIA.

Septoria argyrea.

CHINA ASTER.

Puccinia asteris.

NERIUM OLEANDER.

Phyllosticta nerii.

PEONY.

Cladosporium paeoniae.

VI. Fruit Trees and Shrubs.

PLUM.

Puccinia pruni-spinosae.
Clasterosporium carpophilum.
Sclerotinia cinerea.
Polystigma rubrum.

WALNUT.

Gnomonia leptostyla.
Alternaria nucis.

PEACH.

Clasterosporium carpophilum.
Sphaerotheca pannosa.

APRICOT.

Clasterosporium carpophilum.
Apoplexy.
Sclerotinia laxa.

CHERRY.

Clasterosporium carpophilum.
Cercospora cerasella.

APPLE.

Aspidiotus perniciosus.
Sclerotinia fructigena.
Myxosporium corticolum.
Pseudomonas tumefaciens.
Podosphaera leucotricha.
Fusicladium dendriticum.

QUINCE.

Entomosporium maculatum.
Gloeosporium cydoniae.

PEAR.

Aspidiotus perniciosus.
Septoria piricola.
Gymnosporangium sabinae.

VII. Forest and Avenue Trees and Shrubs.

LIME.

Cercospora microsora.

OAK.

Microsphaera abbreviata.

ACER.

Rhytisma acerinum.

VIII. Pasture and Forage Plants.

AVENA ELATIOR.

Puccinia lolii.

LOLIUM ITALICUM.

Erysiphe graminis.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

England. — The Fruit Tree Pests (East and West Suffolk) Order of 1936, dated 27 May, 1936, fixes the rules to be followed for examining fruit trees attacked by plant and animal parasites (*Sphaerotheca mors-uvae, Nectria galligena, Venturia inaequalis, V. pirina, Sclerotinia* spp., *Anthonomus pomorum, Plesiocoris rugicollis, Hoplocampa testudinea, H. flava, Psylla mali, Eriopyes ribis* and other mites, *Cydia pomonella, Lygus pabulinus, Aphididae Byturus tomentosus,* and *Cheimatolsia brumata*) also those for preventing the spreading of these diseases and pests in East and West Suffolk. (*Statutory Rules and Orders,* 1936, No. 622. *Destructive Insects and Pests, England. The Fruit Tree Pests (East and West Suffolk) Order of* 1936, *dated May* 27, 1936. (*D. I. P.* 590), London, 1936, 4 pp.).

Australia (South Australia). — The Minister of Agriculture has notified the following:—

(1) The plants described in the First Schedule hereto have, by regulation, been declared to be noxious weeds throughout the whole of the State.

(2) The plants described in the Second Schedule have, by regulation, been declared to be noxious weeds to the extent therein specified.

(3) The regulations provide that the time for compliance with any notice to destroy noxious weeds under sections 14 or 28 of the Noxious Weeds Act, 1931, shall be one month.

THE FIRST SCHEDULE.

Botanical Name.	Common Name.
Asclepias fruticosa *Asclepias rotundifolia*	Cotton Bush.
Asphodelus fistulosus	Wild Onion.
Carthamus lanatus	Saffron Thistle.
Cenchrus tribuloides	Innocent Weed.
Centaurea calcitrapa	Purple Star Thistle.
Centaurea solstitialis	Yellow Cockspur.
Cirsium arvense	Canada Thistle.
Citrullus colocynthis	Colocynth.
Conium maculatum	Hemlock.
Cuscuta spp.	Dodder.
Datura tatula	Horny Thorn Apple.
Datura stramonium	Thorn Apple.
Euphorbia terracina	False Caper.
Homeria collina	Cape Tulip.
Homeria miniata *Hypericum perforatum*	St. John's Wort.
Marrubium vulgare	Horehound
Ornithogalum thyrsoides	Black-eyed Susan.
Reseda luteola	Dyer's Weed (Weld).
Solanum rostratum	Buffalo Burr.
Solanum sodomaeum	Apple of Sodom.
Xanthium californicum	Californian Burr.
Xanthium spinosum	Bathurst Burr.

THE SECOND SCHEDULE.

Chenopodium album .. .. White Goosefoot (Fat Hen).

(Applies to that portion of the State comprising the City of Adelaide and the Waikerie Irrigation Area).

Foeniculum vulgare .. .. Fennel.

(Applies to that portion of the State comprising the Municipality of Mount Gambier).

Lavandula stoechas .. .. Wild Lavender.

(Applies to that portion of the State comprising the District Council of Port Elliot).

Lycium ferocissimum .. .. African Box Thorn.

(Applies to the whole of the State, except where grown as a hedge on the 17th March, 1932, and kept trimmed to a width not exceeding in any part 4ft. 6in. and to a height not exceeding 7ft.).

Lepidium draba .. .. Horary Cress.

(Applies to that portion of the State comprising the District Council of Tatiara).

Silybum marianum .. .. Variegated Thistle.

(Applies to that portion of the State comprising the Municipality of Mount Gambier).

(*The South Australian Government Gazette*, Adelaide, January 16, 1936, No. 3, p. 143).

Brazil (State of São Paulo). — By Decree No. 7.423 of 17 October, 1935, approval is given to the regulation relative to the functioning of services for protection against the coffee berry borer [*Stephanoderes hampei*], in accordance with the dispositions contained in Article 47 of the Decree No. 6.621 of 24 August, 1934. (Secretaria da Agricultura, Industria e Commercio do Estado de São Paulo. Directoria de Publicidade Agricola. *Boletim de Agricultura*, S. Paulo, 1936, série 36ª, anno de 1935, nº. unico, pags. 102-113).

Spain. — By Decree of 15 June, 1936, the Minister of Agriculture is authorised to present to the 'Cortes' a bill for a Fundamental Law on the encouragement and protection of apiculture.

According to Article 3 of the said bill, the Agricultural and Forestry Services engaged in the application of measures for the destruction of field pests, will be obliged to inform the respective Municipalities in order that said authorities may bring it to the notice of bee-keeepers in the locality in advance so that they may take the necessary steps during the operations indicated.

Such notification should be given by all persons applying the said steps.

When the substance used for this control entails the utilisation of recipients or cases these should be protected by cloths or wire netting which prevent them coming in contact with the bees. (*Gaceta de Madrid*, 18 junio 1936, año CCLXXV, tomo II, núm. 170, pág. 2444).

*** By 'Orden' of 24 June, 1936, regulations are laid down relative to suitable means of prevention in locust control. (*Ibid.*, 26 junio 1936, núm. 178, págs. 2692 y 2693).

*** By 'Orden' of 25 June, 1936, supplementary instructions are issued for completing the 'Orden' of 24 of the same month. (*Ibid.*, 27 junio 1936, núm. 179, pág. 2718).

Estonia. — The Royal Station Ministry of Foreign Affairs has informed the International Institute of Agriculture that the Estonian Chargé d'Affaires in Rome notified the said Ministry on 5 August, 1936 of the adherence of the Estonian Government to the International Convention for Plant Protection, signed in Rome on 16 April, 1929, [see this *Bulletin*, 1929, No. 4, pp. 50-55].

United States of America. — Notice of Quarantine No. 48 (eleventh revision) and rules and regulations (fourteenth revision) supplemental to the said Notice of Quarantine, on account of the Japanese beetle (*Popillia japonica*), have been approved on 7 March and are effective from 16 March, 1936 [see also this *Bulletin*, 1935, No. 10, pp. 228-229].

An important change in the revision of the Japanese beetle quarantine provides for exemption of certain products by administrative instructions issued by the Chief of the Bureau of Entomology and Plant Quarantine, when in his judgment the nature of the growth or production, or the manufacture or processing of such products, is such that their interstate movement is not considered to constitute danger of spread of infestation.

The regulations have also been revised to include in the regulated area additional territory in the States of Maine, Maryland, New York, and Virginia. Some outlying areas where Japanese beetle infestations have been found are not included in the regulated area because of assurance from the States concerned that adequate measures will be taken to prevent the spread of the pest therefrom. The restrictions on the interstate movement by refrigerator car or motor truck of all fruits and vegetables from the District of Columbia and portions of the States of Delaware, Maryland, New Jersey, Pennsylvania, and Virginia, between 15 June and 15 October, inclusive, have been extended to apply to the entire State of Delaware. (United States Department of Agriculture. Bureau of Entomology and Plant Quarantine. *Japanese Beetle Quarantine. Quarantine No. 48. Revision of Quarantine and Regulations*, [Wnshington], 1936, 13 pp.).

*** Amendment No. 1 to rules and regulations supplemental to Notice of Quarantine No. 71 [see this *Bulletin*, 1935, No. 6, p. 136], on account of the Dutch elm disease [*Ceratostomella ulmi*], approved on 27 March and effective on 1 April, 1936, adds to the area designed as regulated seven townships in Hunterdon County; one township in Middlesex County; three townships in Monmouth County; two townships in Morris County; five townships in Sussex County; and eight townships in Warren County, in the State of New Jersey. It also adds seven towns in Orange County; four towns in Putnam County; and two towns in Westchester County, N. Y.

This action was taken on the basis of intensive inspections made throughout the year which disclosed infections in areas contiguous to the previously regulated area. (United States Department of Agriculture. Bureau of Entomology and Plant Quarantine. *Modification of Dutch Elm Disease Quarantine Regulations*, [Washington], 1936, 2 pp.).

France. — By Law of 13 August, 1936, is ratified and converted in a Law the Decree of 7 November, 1935, [see this *Bulletin*, 1936, No. 2, p. 33] containing modifications in the customs fees on pyrethrum [*Chrysanthemum cinerariaefolium*] and products derived from pyrethrum. (*Journal Officiel de la République française*, Paris, 14 août 1936, LXVIII[e] année, n° 190, p. 8747).

British Guiana * — The Ordinance No. 37 of 1935, published on 28 December, 1935 and which may be cited as the Plants Diseases and Pests (Prevention) Ordinance, 1935, regulates the importation and exportation of plants and makes provision for the prevention and eradication of diseases and pests affecting plants.

*** The Order in Council No. 550 of 2 April, 1936, declares the Coconut Caterpillar (*Brassolis sophorae* L.) to be a notifiable pest, and the Witches' Broom Disease of Cacao (*Marasmius perniciosus* Stahel) to be a notifiable disease in the North West District of the Colony.

*** The Order in Council No. 551 of 2 April, 1936 prohibits the importation of sugar canes, grasses, earth ,soil and other articles and prescribes the conditions under which banana and plantain suckers may be imported.

*** The Order in Council No. 552 of 2 April, 1936 prescribes the conditions under which plants and plant parts intended for propagation, other than sugarcane and other grasses, plantains and bananas may be exported from or imported into the Colony.

Italy. The Royal Decree-Law No. 1530 of 11 June, 1936, revokes Article 12 and modifies Articles 6, 7, 10, 11, 15, 17, 18, 20, 24, 27 and 32 of the Law No. 987 of 18 June, 1931 [see this *Bulletin*, 1931, No. 9, p. 166] containing measures for the protection of cultivated plants and agricultural products against noxious agents, also measures for the organisation of services relative thereto, (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 21 agosto 1936, anno 77°, n. 193. p. 2646-2647).

*** By Ministerial Decree of 19 June, 1936, and by virtue of the Royal Decree Law No. 1754 of 12 August, 1927 containing measures for the development of olive-growing, also the Law No. 987 of 18 June, 1931 [see this *Bulletin*, 1931, No. 9, p. 167] containing measures for the protection of cultivated plants and agricultural products, a compulsory syndicate has been established for the improvement and development of olive-growing in the province of Cagliari.

* From documents communicated to the Institute by the Department of Agriculture, Georgetown, British Guiana.

The contribution payable by each member of the syndicate cannot exceed 10 centesimi per olive tree in bearing. (*L'Agricoltura Sarda*, Cagliari, 31 maggio-15 giugno 1936, anno XV, n. 10-11, pp. 1-2).

Italian Libya. — By Decree of the Italian Minister of Colonies, dated 20 May, 1936, the importation into Italian Libya of plants and fresh fruits of Rosaceae is not permitted without previous authorisation from the Phytosanitary Bureau of the Colony.

Consignments of the above mentioned plants and fruits should be accompanied by an official certificate of origin attesting that the plants and fruits in question do not come from countries or provinces infested by the oriental peach moth (*Cydia* [*Laspeyresia*] *molesta*). (Ministero delle Colonie. *Bollettino Ufficiale. Legislazione e Disposizioni ufficiali*, Roma, giugno 1936, anno 1936, n. 6, p. 426).

Morocco (French Zone). — A Decree of the Director General of Agriculturè, dated 17 April, 1936, fixes the conditions and programme of the competition for the post of controller of plant protection and phytopathological inspection.) (Empire chérifien. Protectorat de la République française au Maroc. *Bulletin Officiel*, Rabat, 1er mai 1936, XXVe année, nº 1227, p. 534-535).

*** A Decision of the same Director General, dated 21 April, 1936, fixes the date of the competition for four posts as controllers of plant protection and phytopathological inspection. (*Ibid.*, p. 535-536).

*** By Decree of the Director of Economic Affairs, dated 27 July, 1936, in the circle of Chauïa-sud, an inquiry has been opened on the project of forming a Syndicate for the control of the 'pou rouge' [*Chrysomphalus dictyospermi*]. (*Ibid.*, 7 août 1936, nº 1241,

Turkey * — The Law No. 2906 relative to the protection of plants against diseases and pests passed on 29 January, 1936, has been promulgated and came into force on the following 5 February.

The first part of the Law, concerning the importation and exportation of plants, stipulates that plants introduced from foreign countries should be free from diseases and pests which should be prevented from entering Turkey. It is also required that the places of origin of plants introduced should be free from these diseases and pests. All consignments of plants presented for importation should be accompanied by a certificate of health and origin issued by a Plant Protection Station recognised by the Turkish Government.

The list of diseases and pests which should be prevented from entering Turkey will be published and communicated by the Ministry of Agriculture to the countries interested.

* Communication from the official correspondent of the Institute, Mr. SUREYA, Councillor of State, Ankara, Turkey.

The importation of plants is limited to certain custom-houses which will be Stations of disinfection and control and which will be expressly authorised by the Council of Ministers. Importation will only be admitted after verification of documents and after examination has shown that the plants are free from diseases and pests.

If, on examination, the presence of diseases and pests is stated, the importer may return the merchandise to the place of origin within the following 15 days. If the merchandise is not returned it will be destroyed at the expense of the Station of disinfection and control in the presence of a mixed Commission. A report should be drawn up.

If the diseases or pests stated by the examination are those which are already very widespread in Turkey, the Ministry of Agriculture may permit importation of the merchandise after preliminary disinfection carried out by the custom-house Station of disinfection at the expense of the importer.

The certificates necessary for consignments of plants and parts of plants intended for exportation from Turkey will be issued by the Agricultural and Plant Protection Service. Exportation will only be permitted when the custom-house Station of disinfection and control has declared that the merchandise corresponds to the phytosanitary regulations of the importing country.

The second part of the present Law concerns the protection of plants cultivated in the country.

It is compulsory to declare the appearance of all diseases and pests.

The Agricultural and Plant Protection Service will give farmers the necessary instructions for control. Owners and tenants of land are obliged to carry out the operations of control according to the instructions given and at the period fixed.

If at the date fixed for the control this has not been carried out by the persons interested it will be carried out by the Ministry of Agriculture.

If the land infected by diseases and pests is not the property of any person or if the infestation takes alarming proportions, the whole population will be obliged to take part in the control, according to the terms of the Law of 26 May, 1926, relative to locust control. In this case the expenses will be born by the vilayets or by the Ministry of Agriculture. The civil and military authorities are obliged to render assistance.

The Ministry of Agriculture is authorised to take the measures necessary for preventing the spread of diseases and pests from an infested region to other parts of the country not yet infested. If the Ministry of Agriculture decides that the plants or produce attacked should be destroyed, it should indemnify the person interested by payment of half the value of the products destroyed.

The officials of the Agricultural and Plant Protection Service have free access to all places of cultivation, warehousing and transport of plants.

Nurseries and horticultural establishments will be supervised by the Ministry of Agriculture at least twice a year.

The importation, production and sale of means of control will be subordinated to the permission of the Ministry of Agriculture. Manufacturers of preparations to whom the Ministry of Agriculture will accord this permission should take care that their products retain the physical and chemical characters at the same stan-

dard. All modifications should be communicated to the Ministry which should subsequently renew the supervision.

The Ministry will communicate to persons interested the list of authorised means of control.

The third part of the Law contains penal dispositions.

The last part revokes the Law of 27 December, 1927, relative to grape phylloxera and that of 14 August, 1930, concerning pests and weeds, also paragraphs 28 and 29 of the Law No. 1528 relative to budding trees growing wild.

Uruguay. — The Decree of 28 January, 1936 regulating the exportation of fresh fruits, establishes, *inter alia*, that only fresh fruit may be exported which is virtually free from insects and cryptogamic diseases or any other damage of physical origin which affects its appearance.

The official of the ' Defensa Agrícola ', before issuing the health certificate, should determine that all regulations established in this present Decree have been carried out.

All consignments of fruit refused by the ' Inspección de Embarque ' owing to an unsatisfactory health condition or for any other reason, should be withdrawn from the port zone, within 24 hours after notification of the decision, and should be marked with a stamp ' Plaza ' or otherwise destroyed at the expense of those interested. (*Diario Oficial*, Montevideo, 2 de marzo de 1936, tomo 122, núm. 3858, págs. 261-A a 263-A).

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Importance of the virus diseases of sugar-cane, by E. W. Brandes and Julius Matz.

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The second part treats the various diseases and remedies to be used. These diseases are also distributed in three groups corresponding to the three categories of plants cultivated.

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NOTES

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A Plant Protection Section at the Hungarian Ministry of Agriculture. — A special Section has recently been established at the Ministry of Agriculture at Budapest for the organisation of plant protection in Hungary in close connection with the other centralised Services of the said Ministry. Dr. Sándor Antalffy, Ministerial Councillor, has been appointed Chief of this Section.

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